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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,379	09/08/2003	Takeshi Okazaki	00684.002380.1	2185
5514	7590	02/20/2004		EXAMINER
				BROOKE, MICHAEL S
			ART UNIT	PAPER NUMBER
			2853	

DATE MAILED: 02/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

(2)

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/656,379	OKAZAKI ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Michael S. Brooke	2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on \_\_\_\_\_.  
 2a) This action is FINAL.                  2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 41-45 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_ is/are allowed.  
 6) Claim(s) 41-45 is/are rejected.  
 7) Claim(s) \_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 08 September 2003 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. 08/717,072.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
     Paper No(s)/Mail Date 09/08/03.

4) Interview Summary (PTO-413)  
     Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_

## DETAILED ACTION

### ***Double Patenting***

The no statutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper time wise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Long*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Onramp*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Torrington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a no statutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

**Claims 41, 42 and 45 rejected under rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-52 of U.S. Patent No. 5,821,962 (Kudo et al.) in view of Ishii (4,409,596) and Roy et al. (5,124,716).**

Kudo et al. teaches the claimed invention with the exception of a liquid moving means for moving the movable member without ejecting the liquid, and applying energy to a bubble generating means which is lower than that for ejecting liquid.

Ishii teaches an ink jet print head, wherein the meniscus is bulged out by an intermediate pulse, which does not eject ink. After the intermediate pulse, an ejection pulse is applied to discharge an ink drop. Operating the printer in this manner provides

the advantage of maintaining the head in a state of dynamic equilibrium that allows for high speed and high quality printing, when producing gradated images (col. 1:44-62).

Roy teaches that piezoelectric actuators and thermal ink jet heaters are known equivalents in the art for the purpose of ejecting ink. Since these two types of actuators were art recognized equivalents at the time the invention was made, one of ordinary skill in the ink jet art would have found it obvious to have substituted a heater for the piezoelectric actuator of Ishii, for the purpose of ejecting ink.

Supplying a heat generating element with energy insufficient to eject ink, but sufficient to generate a bubble that would displace the meniscus would inherently cause movement in the ink. Such movement would inherently induce movement in a movable member, such as the one disclosed in Kudo et al.

**Claims 43 and 44 are rejected under rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-52 of U.S. Patent No. 5,821,962 (Kudo et al.) in view of Ishii (4,409,596) and Roy et al. (5,124,716), as applied to claims 41, 42 and 45 above and further in view of Teresawa (EP-326428).**

Kudo et al., as modified, teaches the claimed invention, as above, with the exception of said applied energy being lowered by decreasing a pulse width, and said applied energy being lowered by decreasing voltage level thereof.

Teresawa discloses means for changing the state of said liquid by changing the temperature of said liquid, wherein said temperature changing is effected using heating

means provided in a substrate having bubble generating means for forming said bubble generating region (col. 5:18-37), said applied energy is lowered by either decreasing a pulse width or decreasing the voltage level (col. 7:17-23). This provides the advantages of reducing the amount of ink consumed for discharge recovery, so as to shorten recovery time (col. 2:34-39).

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the ink jet art to have provided Kudo et al., as modified, an energy which is lowered by decreasing a pulse width, or an energy which is lowered by decreasing voltage level thereof, for the purpose of reducing the amount of ink consumed for discharge recovery and shortening recovery time, as taught by Teresawa.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael S. Brooke whose telephone number is 703-305-0262. The examiner can normally be reached on M-F 5:30-2:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on 703 308-4896. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael S. Brooke  
Examiner  
Art Unit 2853

MSB  
02/04/04